

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:	M 05604A Pre Rain Garden	Client:	Alaskan Copper Works
Date Received:	05/20/10	Project:	Down Spouts Test, F&BI 005184
Date Extracted:	05/21/10	Lab ID:	005184-01 x10
Date Analyzed:	05/21/10	Data File:	005184-01 x10.042
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower	Upper
Germanium	99	Limit:	Limit:
		60	125

Analyte:	Concentration ug/L (ppb)
Chromium	80.4
Nickel	180
Copper	607
Zinc	9,130

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Analysis For Total Metals By EPA Method 200.8

Client ID:	M 05604B Pre Down Spout Filter	Client:	Alaskan Copper Works
Date Received:	05/20/10	Project:	Down Spouts Test, F&BI 005184
Date Extracted:	05/21/10	Lab ID:	005184-02 x10
Date Analyzed:	05/21/10	Data File:	005184-02 x10.043
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	101	60	125

Analyte:	Concentration ug/L (ppb)
Chromium	39.3
Nickel	59.4
Copper	221

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Analysis For Total Metals By EPA Method 200.8

Client ID:	M 05604B Pre Down Spout Filter	Client:	Alaskan Copper Works
Date Received:	05/20/10	Project:	Down Spouts Test, F&BI 005184
Date Extracted:	05/21/10	Lab ID:	005184-02 x100
Date Analyzed:	05/21/10	Data File:	005184-02 x100.072
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower	Upper
Germanium	100	Limit:	Limit:
		60	125

Analyte:	Concentration
	ug/L (ppb)

Zinc	14,900
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FRIEDMAN & BRUYA, INC.

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Analysis For Total Metals By EPA Method 200.8

Client ID:	Method Blank	Client:	Alaskan Copper Works
Date Received:	Not Applicable	Project:	Down Spouts Test, F&BI 005184
Date Extracted:	05/21/10	Lab ID:	I0-264 mb
Date Analyzed:	05/21/10	Data File:	I0-264 mb.028
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower	Upper
Germanium	103	Limit:	Limit:
		60	125

Analyte:	Concentration ug/L (ppb)
Chromium	<1
Nickel	<1
Copper	<1
Zinc	<1

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ENVIRONMENTAL CHEMISTS

Date of Report: 05/25/10

Date Received: 05/20/10

Project: Down Spouts Test, PO M05604, F&BI 005184

**QUALITY ASSURANCE RESULTS
FOR THE ANALYSIS OF WATER SAMPLES
FOR TOTAL METALS USING EPA METHOD 200.8**

Laboratory Code: 005187-03 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Chromium	ug/L (ppb)	20	1.61	95	98	67-132	3
Nickel	ug/L (ppb)	20	5.74	91 b	96 b	73-119	5
Copper	ug/L (ppb)	20	3.43	90	93	50-144	3
Zinc	ug/L (ppb)	50	3.93	98	100	46-148	2

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Chromium	ug/L (ppb)	20	102	66-135
Nickel	ug/L (ppb)	20	101	67-134
Copper	ug/L (ppb)	20	102	66-134
Zinc	ug/L (ppb)	50	105	57-135

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ENVIRONMENTAL CHEMISTS

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

A1 - More than one compound of similar molecule structure was identified with equal probability.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for this range fell outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte indicated may be due to carryover from previous sample injections.

d - The sample was diluted. Detection limits may be raised due to dilution.

ds - The sample was diluted. Detection limits are raised due to dilution and surrogate recoveries may not be meaningful.

dv - Insufficient sample was available to achieve normal reporting limits and limits are raised accordingly.

fb - Analyte present in the blank and the sample.

fc - The compound is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. The variability is attributed to sample inhomogeneity.

ht - Analysis performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of normal control limits. Compounds in the sample matrix interfered with the quantitation of the analyte.

j - The result is below normal reporting limits. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The analyte result in the laboratory control sample is out of control limits. The reported concentration should be considered an estimate.

jr - The rpd result in laboratory control sample associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the compound indicated is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received in a container not approved by the method. The value reported should be considered an estimate.

pr - The sample was received with incorrect preservation. The value reported should be considered an estimate.

ve - Estimated concentration calculated for an analyte response above the valid instrument calibration range. A dilution is required to obtain an accurate quantification of the analyte.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

005184

SAMPLE CHAIN OF CUSTODY

K0 ME 05/20/10

AI4

Send Report To

Gerard Thompson

Company

Alaskan Copper Works

Address

628 S. 4th Ave. Ste 50

City, State, ZIP

Seattle WA 98134

Phone #

206-571-6033

Fax #

206-382-8309

SAMPLES (signature)

PROJECT NAME/NO.

Down Spots Test

PO #

M05604

REMARKS

Page # of

TURNAROUND TIME

☒ Standard (2 Weeks)☐ RUSH

Rush charges authorized by:

SAMPLE DISPOSAL

☐ Dispose after 30 days☐ Return samples☐ Will call with instructions

Sample ID	Lab ID	Date	Time	Sample Type	# of containers	ANALYSES REQUESTED										Notes
						TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260	SVOCs by 8270	HFS	Cr	Ca	As	Pb	
M05604A	01	5/19/10	3:30	H ₂ O								X				
Pre Rain Garden																
M05604B																
Pre down spot filter	02	5/19/10	3:30	H ₂ O								X				

Friedman & Bruya, Inc.
3012 16th Avenue West

Seattle, WA 98119

Ph. (206) 285-8282

Fax (206) 283-5044

FORMS\COC\COC.DOC

SIGNATURE

Relinquished by:

Received by:

Relinquished by:

Received by:

PRINT NAME

Gerard Thompson
Pham Pham

COMPANY

ACW
FEBI

DATE

5/20/10
5/20/10

TIME

1:20pm
120pm

Samples received at 18 °C

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Charlene Morrow, M.S.
Yelena Aravkina, M.S.
Bradley T. Benson, B.S.
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e-mail: fbi@isomedia.com

May 25, 2010

Gerry Thompson, Project Manager
Alaskan Copper Works
628 South Hanford
Seattle, WA 98134

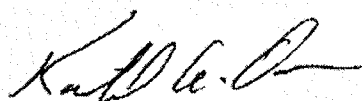
Dear Mr. Thompson:

Included are the results from the testing of material submitted on May 20, 2010 from the Down Spouts Test, PO M05604, F&BI 005184 project. There are 6 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.



Kortland Orr
Project Manager

Enclosures
ACU0525R.DOC